USCGC Reliance Returns Home Following 67-Day Migrant-Interdiction Patrol

Coast Guard Cutter Reliance patrols the Western Caribbean in support of the Joint Interagency Task Force – South October 2014. *U.S. COAST GUARD / Petty Officer 3rd Class Clinton McDonald*

PENSACOLA, Fla. – The crew of U.S. Coast Guard Cutter Reliance (WMEC 615) returned to their homeport in Pensacola, Nov. 4, following a 67-day Caribbean Sea patrol.

During the patrol, Reliance's crew collaborated with numerous Coast Guard assets and other Department of Homeland Security boats and aircraft to detect, deter and intercept unsafe and illegal ventures to the United States.

In support of the Coast Guard's Seventh District, Reliance primarily patrolled the South Florida Straits, south of the

Florida Keys and the Windward-passage, off the northwest coast of Haiti, contributing to the interdiction and care of 613 migrants and 13 detainees. Additionally, Reliance's crew repatriated 120 migrants to Santiago, Cuba, marking the first visit by a U.S. warship to the port in more than 50 years.

"I am extremely pleased by this crew and proud to be a part of this team. Reliance departed homeport shorthanded and was immediately put to the test, performing especially high-tempo migrant interdiction operations. At all hours of day and night, the Reliance crew responded superbly, facilitating the safe care and repatriation of a historic surge of Cuban migrants while also completing qualification requirements and robust training exercises necessary following the summer transfer season," said Cmdr. Brian Chapman, commanding officer of Reliance.

Reliance is a 210-foot medium-endurance cutter homeported in Pensacola with a crew of 77. The cutter's primary missions are counter-drug operations, migrant interdiction, enforcement of federal fishery laws and search and rescue in support of Coast Guard operations throughout the Western Hemisphere.

Coast Guard Cutter Oliver Berry Conducts Bilateral Shiprider Boardings with Samoa

Crew members from the U.S. Coast Guard Cutter Oliver Berry board a foreign flagged fishing vessel. *U.S. COAST GUARD*

HONOLULU – The Coast Guard Cutter Oliver Berry (WPC 1124), a 154-foot Fast Response Cutter homeported in Honolulu, patrolled the Independent State of Samoa's exclusive economic zone while partnering with Samoan Maritime Police and Fisheries Officers, where they executed four safety and living marine resources boardings on Samoan and foreign flagged fishing vessels in Samoan waters, identifying six violations, the Coast Guard 14th District said in a Nov. 4 release.

During their expeditionary patrol across Oceania, Oliver Berry's crew is collaborating with partner governments like Samoa to conduct bilateral shiprider boardings to strengthen maritime domain awareness and resource security within their EEZs; an EEZ is the area of coastal water within a certain distance of a nation's coastline to which the country claims exclusive rights for drilling, fishing and other economic ventures.

The U.S. Coast Guard employs 11 bilateral law enforcement

agreements with Pacific Island Forum nations, including Samoa, to help ensure the nations' maritime resource security and sovereignty. These programs highlight the shared commitment to ensuring security and freedom of navigation in the Pacific.

"Collaborating with our partners throughout Oceania is essential in ensuring a free and open Blue Pacific," said Lt. Cmdr. Micah Howell, commanding officer of the Oliver Berry. "It is a privilege, and we are proud to support Samoa through dedicated partnership in the effort to maintain maritime governance and security."

Oliver Berry's crew also enjoyed a multitude of community engagements during their time in Samoa. These engagements included crew visits to the National University of Samoa Maritime School and Samoa's Victim Support Camp, and a beach cleanup with staff from the U.S. Embassy, Peace Corps and Samoa Tourism Authority.

The crew also provided tours of Oliver Berry for the Maritime Division of the Ministry of Police, Prisons and Corrections Services, the Ministry of Works, Transport and Infrastructure, the Ministry of Agriculture and Fisheries, members of the media and students from the National University of Samoa Maritime School and St. Mary's College.

Oliver Berry's crew will continue patrolling the Blue Pacific across the high seas in support of Samoa, Tonga and Kiribati to combat illegal, unregulated fishing, demonstrating the United States Coast Guard's enduring commitment to our partner nations throughout Oceania.

Navy Installs 3D Printer for Metal Parts on USS Bataan

Kenya Latham, assigned to East Coast Repair, coordinates the on load of a three dimensional printer aboard the Wasp-class

amphibious assault ship USS Bataan (LHD 5), Oct. 19, 2022. *U.S. NAVY / Mass Communication Specialist 2nd Class Darren Newell*

ARLINGTON, Va. – The U.S. Navy has installed a 3D printer capable of producing metal parts for ships on the amphibious ship USS Bataan (LHD 5) in an experiment that could be expanded to across the fleet, a Navy official told Seapower in an interview.

The Navy has already experimented with 3D-printing parts, but they have used polymer printers in the past. But since most of the parts that need replacing are metal, they have limited utility – hence the impetus for this test, said Jim Pluta, additive manufacturing program manager at Naval Sea Systems Command. The Navy completed installation of a metal 3D printer on the Bataan on Nov. 3.

"When sailors deploy forward and they're out on a ship at sea and something breaks, that's when you know you need a replacement part," Pluta said. "Sometimes they have it on ship, and sometimes they don't."

As a result, if a part breaks and there is no replacement immediately available, the crew has to wait for a part to be delivered or has to make do until the ship returns to port.

"If there's a failure of a smaller subcomponent, rather than order that larger assembly or larger system, they can print that smaller subcomponent that failed," Pluta said. "They reverse engineer or design it using CAD [computer-aided design] and create a replacement part that maybe didn't exist or existed only from the manufacturer. Instead, they print that part on demand and put it into the larger system, and it can be brought up to fully mission capable again."

Pluta said the research and development into this system has been going on for about four years, starting with the polymer printers that are fairly inexpensive to install. But a 3D printer for metal has been the main goal, he said.

“Most everything aboard ship is made of metal and not plastic,” he said. “We’re looking at this as a fairly permanent installation.”

Pluta says it’s possible this technology will go on the entire fleet, although it is much better suited at the moment for larger ships like aircraft carriers and amphibious ships. But it could go on other vessels, such as submarines, as long as the Navy can find printers that can handle the shipboard motion, vibration and acceleration. Printers can also have a large footprint, so the space it takes up is also a factor.

Pluta said even if printers couldn’t be placed on every ship, there could be a model where a printer is shared among a carrier strike group that is underway, with a printer on one ship producing parts that are shared between the vessels.

“Ideally those larger vessels could take requests from ships that accompany it,” he said. “They’ve demonstrated that recently where we installed a printer on [aircraft carrier USS John C.] Stennis [CVN 74] and used the printer for prototyping with a polymer printer. So, they’ve demonstrated that capability.”

CNO Visits Republic of Korea; Meets with ROK Leadership and Sailors

U.S. Chief of Naval Operations Adm. Mike Gilday poses for a photo with Chief of Naval Operations of the Republic of Korea Navy Adm. Lee, Jong-Ho, and their spouses while Gilday visited U.S. Navy Sailors in Busan, Republic of Korea (ROK), Nov. 3. *U.S. NAVY / Cmdr. Courtney Hillson*

BUSAN, Republic of Korea – Chief of Naval Operations (CNO) Adm. Mike Gilday and his wife Linda Gilday visited the Republic of Korea (ROK), Nov. 3-4, to meet with U.S. Sailors and military leaders, as well as ROK officials, the CNO's Public Affairs Office said in a Nov. 4 release.

Adm. Gilday met with the Chief of Naval Operations of the Republic of Korea Navy Adm. Lee, Jong-Ho, and Commander, Republic of Korea Fleet Vice Adm. Kang, Dong Hoon.

"The alliance and close relationship between our naval forces is a linchpin of security in Northeast Asia," said Gilday. "Our alliance provides a stabilizing and deterring presence and our commitment to the defense of the Republic of Korea remains ironclad."

"Lately, the DPRK [Democratic People's Republic of Korea] is raising levels of provocation by launching missiles and artillery shells, flying warplanes and seriously threatening

peace and security in the international community," said Lee. "We have to bolster the two navies' military engagement and combined defense posture to prepare for the current, critical security situation."

"The U.S. remains committed to peace and prosperity through the region in order to maintain a free and open Indo-Pacific," Gilday added.

CNO visited Seoul, Busan and Gyerong, ROK. At each engagement, Gilday emphasized the significance of presence and the strength of the partnership between the U.S. and ROK navies, as well as the importance of forward-deployed naval forces. Throughout his visit, Adm. Gilday spoke with U.S. Sailors, as well as service members assigned to the ROK navy.

He also offered his sympathies to ROK following the recent tragedy in Seoul.

"With great sorrow, my wife Linda and I grieve alongside the people of Korea," said the CNO. "Our hearts are heavy. We will never forget the strength of the families and the community with whom we met over the past two days."

The Gildays also toured Commander, Naval Forces Korea headquarters, attended an awards ceremony and reenlisted Sailors.

The U.S. and Republic of Korea navies regularly operate together for many bilateral exercises and operations. Joint exercise Vigilant Storm started this week and focuses on building interoperability and readiness. Recently, both navies participated in the Korean-led exercise Hoguk, an annual exercise conducted by ROK marines. The ROK recently also hosted the 2022 Multinational Mine Countermeasures Exercise and Symposium at Busan Naval Base, which was an opportunity for leaders from multiple nations to meet and share knowledge about mine countermeasures.

This past September, USS Ronald Reagan (CVN 76) pulled into Busan, for the first time since 2017, marking the Japan-based carrier’s first trip to the ROK in nearly four years. CNO Gilday visited ROKS Marado (LPH 6112) over the summer during exercise Rim of the Pacific 2022.

Gilday’s visit to ROK precedes a trip to Japan for the Japan Maritime Self Defense Force International Fleet Review and Western Pacific Naval Symposium.

Attack Sub Chief Talks SSN(X), Maintenance Challenges

The Los Angeles-class submarine USS Cheyenne (SSN 773) passes through the newly procured entrance structure that closes in the Superflood Basin. *U.S. NAVY / Jim Cleveland*

ARLINGTON, Va. — The admiral in charge of the U.S. Navy's attack submarine program gave an update on the SSN(X) program while talking about the root causes of challenges the service faces from maintenance backlogs during an address at the Naval Submarine League's annual symposium in Arlington, Virginia, Nov. 2.

Rear Adm. Jonathan Rucker, program executive officer for attack submarines (PEO SSN), said that the Navy was in the midst of looking at the trade space for SSN(X), which involves technology assessments and capability reviews leading up to an analysis of alternatives.

"This is really a team effort," he said. "We're working with the shipbuilders, we're working across government, we're

working across industry to see what technologies are going to make the most sense.

“We want to learn from other platforms, so we put in the most capability we can but obviously we will not set [ourselves] up for capability that will not deliver,” he added.

He noted that the program has delivered 21 Virginia-class submarines to date with another 17 under contract or in construction, with two planned for delivery this year and two next year as well.

But the main struggle he highlighted had to do with the maintenance backlog the fleet faces, particularly when it comes to submarines. Of the 57 attack submarines in the fleet, 18 of them are unavailable because of maintenance.

“We should be down much lower,” Rucker said. “We should be at 10. … So we’re not where we need to be. That’s just a fact.”

He identified three main causes for this: planning, material and shipyard throughput.

With regard to planning, he noted that 30% of maintenance is unplanned, which is a major driver of maintenance time. The program’s goal is to reduce that figure to 10% by 2026, he said.

Rucker also said that about half of the material for maintenance isn’t ordered until the start of the submarine’s availability, leading to delays because there is often a long lead time associated with that material.

He vowed to take efforts to address all three areas in order to get the maintenance backlog under control.

Sub Admiral on China: 'We Will Not Yield Any Ground to Our Competitor'

Tugboats assist the Los Angeles-class fast-attack submarine USS Key West (SSN 722) as it prepares to moor in Busan, South Korea, Oct. 31, 2022. *U.S. NAVY / Mass Communication Specialist 2nd Class Adam Craft*

ARLINGTON, Va. – The commander of U.S. submarine forces in the Pacific Fleet struck a defiant tone in discussing the challenge posed by China at the Naval Submarine League's annual symposium in Arlington, Virginia, Nov. 2, vowing that the United States would "not yield any ground to our competitor."

Competition between the United States and China has increased in recent years due to U.S. naval drills in China's backyard and U.S. involvement in Taiwan, and U.S. officials in recent

years have taken an even sterner tone with how the growing naval power operates in the East and South China seas. Rear Admiral Jeffrey T. Jablon, commander of the U.S. Pacific Fleet submarine force, told symposium attendees that his “No. 1 focus” is the People’s Republic of China (PRC), despite Russia’s more acute and immediate activity in Ukraine, and he vowed that the United States would only increase its presence off the coast of China.

“The PRC’s rapid growth in military capability reinforces the critical importance of not only maintaining but … expanding our reach,” Jablon said. “We will maximize our strength in the undersea domain.”

He said that he would ensure the Pacific submarine fleet would be “ready at all times for full-spectrum cross-domain operations,” adding that his office had established a campaign plan for submarine forces that he described as “warfighting first, people always and safety is the bedrock of everything we do.”

The most important line of effort in that plan, he said, is modernizing the Navy’s fleet of ballistic missile submarines armed with nuclear weapons, pointing to efforts to maintain the Ohio-class SSBNs out until the 2040s while building the follow-on Columbia-class program.

Another line of effort is to “prepare for the fight in the ‘decade of maximum danger,'” Jablon said.

“That specifically refers to the PRC,” he said. “We’ve heard ‘we’re in an inflection point,’ ‘it’s a critical decade,’ ‘it’s a decisive decade.’ And it’s true. That’s my No. 1 concern. … China has built the largest Navy in the world, guaranteeing its numerical advantage in the South and East China seas.

“We will intensify our efforts to prepare our undersea force to deter and, if necessary, to beat the PLAN [People’s

Liberation Army Navy],” he continued. “We will not yield any ground to our competitor.”

Navy’s FLEX Program at Forefront of Emerging Unmanned Technologies

An FVR-90 autonomous delivery drone from L3 Harris Tactical Unmanned Aerial Systems prepares to land onto the flight deck of the Spearhead-Class expeditionary fast transport vessel USNS Burlington (T-EPF-10), amongst distinguished visitors from the Scientists-to-Sea program as part of the Navy’s Fleet Experimentation Program (FLEX), in the Atlantic Ocean, Oct. 16, 2022. *U.S. NAVY / Mass Communication Specialist 1st Class Steven Khor*

ATLANTIC OCEAN — The Navy's Fleet Experimentation Program (FLEX), featuring unmanned aerial and surface vehicles, was held on the Spearhead-class expeditionary fast transport vessel USNS Burlington (T-EPF-10) in the waters around Key West, Fla. Oct. 16-21, 2022, U.S. Naval Forces Southern Command/U.S. 4th Fleet Public Affairs said in a Nov. 3 release.

Organized by U.S. Naval Forces Southern Command/U.S. 4th Fleet, and the Office of Naval Research's (ONR) sponsored SCOUT initiative, the goal of FLEX was to test, evaluate and showcase the latest unmanned vehicles to strengthen and increase warfighter capabilities.

The purpose of this event is to bring new technology to address operational problems in the fleet," said Christopher Heagney, the Naval Air Fleet and Force advisor to U.S. Naval Forces Southern Command/U.S. 4th Fleet and ONR. "Manned systems have an operational penalty of having people. The operational commander is assuming a high risk when there is a person who can be captured or killed. By having an unmanned system we are able to eliminate that."

Heagney said Joint Interagency Task Force South (JIATF-South) only has a limited number of assets to interdict illicit trafficking in the U.S. Southern Command area of responsibility. If those assets break, they lose valuable time going back to port, getting repair parts and returning. Unmanned platforms could present a solution by transporting those parts to where they need to be at sea.

ONR's SCOUT initiative is an ongoing, multi-agency experimentation campaign for identifying alternative ways to bring unmanned technologies to solve warfighter problems, operationalize them and bring them to the Fleet. SCOUT is committed to getting nontraditional, commercial-off-the-shelf, government-developed and/or government-sponsored technologies

to the fleet rapidly.

The Key West FLEX employed commercially developed unmanned aerial systems (UAS) and unmanned surface vehicles (USV) to carry out diverse tasks related to drug interdiction including tracking and identifying specific targets, logistics and re-supply and forward-deployed combat repair. The unmanned vehicles performed re-supply maneuvers in the ocean and at inland and coastal locations.

Industry leaders agree that the ultimate goal is to lessen the danger to warfighters through the use of unmanned systems and thus enhancing their capabilities. One day these technologies such as delivery of equipment and parts, fuel, provisions and medical supplies can be vital to mission safety and success of warfighters operating in austere conditions.

“FLEX is an important and productive partnership between 4th Fleet, Center for Naval Analysis and the Office of Naval Research as well as industry partners to implement solutions to pressing operational problems,” said Rear Adm. Doug Sasse, 4th Fleet’s reserve vice commander. “Efficient flow of logistics in a contested environment is going to be a key enabler to the Navy and Marine Corps operating concepts of distributed maritime operations (DMO) and expeditionary advance-based operations (EABO), and a lot of the technology that we have incorporated as part of FLEX will help DMO and EABO reach full potential.”

ONR SCOUT, Fourth Fleet and JIATF-South worked alongside other commands including the Naval Research Laboratory, Marine Corps Warfighting Laboratory, Defense Innovation Unit and Naval Air Systems Command. ONR sponsored Scientists-to-Sea went underway with Burlington to see the technology firsthand.

“This year is quite exciting as we have been building on previous events to improve our capabilities at sea, leveraging

unmanned assets in order to do what we want, and do it out at sea," said Capt. Chip Wrye, the director of the Maritime Operations Center. "Specifically, this week we have been figuring out how to move packages between ships that are each individually moving, and do it in a way that the unmanned asset can find the receiving ship, and transfer its package to that ship without putting personnel in harm's way."

"FLEX and the ONR SCOUT collaboration event was a great opportunity to see the mission readiness of industrial capabilities to mitigate logistical support challenges to deep-sea operations, which drive Navy and Coast Guard ship day availability to JIATF-South," said Jeffrey Havlicek, J7 director for Innovation and Technology, JIATF-South. "This event showcased a menu of options and generated comparative insights vital to our mission-area analysis of low-cost resupply at sea."

The Key West FLEX event was the culmination of multiple scenario-based demonstrations of technology capabilities and characteristics held this year leading up to a large-scale main experimentation event in March 2023.

U.S. Naval Forces Southern Command/U.S. 4th Fleet supports U.S. Southern Command's joint and combined military operations by employing maritime forces in cooperative maritime security operations to maintain access, enhance interoperability, and build enduring partnerships in order to enhance regional security and promote peace, stability and prosperity in the Caribbean, Central and South American region.

Vice Adm. Houston: Integration of Women in Submarine Fleet Key to Future Force

Master Chief Information Systems Technician Angela Koogler, the chief of the boat aboard the ballistic missile submarine

USS Louisiana (SSBN 743), poses for an environmental portrait at Naval Base Kitsap – Bangor, Wash, Aug. 29, 2022. Koogler is the Navy's first female chief of the boat. *U.S. NAVY / Mass Communication Specialist 1st Class Brian G. Reynolds*

ARLINGTON, Va. – The U.S. Navy's submarine force has taken major strides at integrating women into the submarine fleet, which will be key to building the most "talented, capable force" possible, the commander of submarine forces told attendees of the Naval Submarine League's annual symposium here Nov. 1.

Vice Adm. William Houston highlighted recent advancements women have made in the submarine fleet, such as the first female "chief of the boat" on the ballistic-missile submarine USS Louisiana (SSBN 743).

"And female XOs [executive officers] and commanding officers are not restricted where they can go," Houston said. "We are working to integrate the submarine force faster."

Houston said that in many cases women are retained at a higher rate than male officers, and that opening the door to more women in the fleet would help the Navy attract the talent that it needs at a time when retention is a challenge throughout the service.

"We want the most talented, capable force and we need to remove any barriers to integration," he said. "It is absolutely critical that we do that."

Houston highlighted other personnel priorities for the fleet, including a growing emphasis on the "cyber workforce."

"We have now established a cyber watch pilot where we actually have personnel watching our cyber systems underway, and we're looking to roll that out to the entire fleet," he said. "We have integrated more than we have with the IW [irregular

warfare] community. … We have cryptological technicians leading some of our EW [electronic warfare] efforts on those ships.”

Houston said the Navy would need to be bold in leveraging expertise throughout the service.

“We are not afraid to integrate with non-submarine communities,” he said. “We have tremendous capabilities in the Navy that we are taking advantage of because we need to do that to prepare for combat.”

Admiral: Navy Planning to Extend Service Lives of 5 Ohio-Class Subs

The U.S. Navy Ohio-class ballistic missile submarine USS Rhode Island (SSBN 740) arrived in Gibraltar for a scheduled port visit, Nov. 1, 2022. *U.S. NAVY*

ARLINGTON, Va. — The Navy is planning to extend the service lives of up to five Ohio-class ballistic missile submarines (SSBNs) to help cover a projected shortfall in the 2030s as aging subs retire faster than newly built Columbia-class submarines can replace them, a service official told attendees of the Naval Submarine League's annual symposium here on Nov. 1.

Rear Adm. Scott W. Pappano, strategic submarines program executive officer, said that the Navy will see its fleet of SSBNs dwindle from 14 today to 10 or 11 sometime in the 2030s. Because the Navy requirement is for 10 operational submarines at all times, that situation leaves the Navy with very little margin, he said.

As a result, the service is examining the possibilities of extending the service lives of some subs by about three years.

“Can we look at specific hulls individually and get additional life out of those hulls with some targeted maintenance? We are looking at that right now,” Pappano said. “We are planning right now … to do up to five hulls that we already targeted for a three-year life extension with about 18 months in the depot.”

Pappano added that the final number won’t necessarily be five. He believes they will need to do at least two or three, but the service will plan for up to five.

“It is not an all-or-nothing decision,” he said. “It’s an incremental decision. As the strategic landscape changes, as the role changes, as our construction performance changes, we can evaluate that going along.”

The first sub likely to undergo the process would be the USS Alaska (SSBN 732) in fiscal 2029, which means planning to execute the service life extension would begin in the 2025 to 2026 timeframe, Pappano said.

The Navy is in the midst of a high-stakes transition between the Ohio-class and Columbia-class SSBN programs. The Navy purchased the first Columbia-class boat in fiscal 2021, and will procure the second in 2024, with the remaining 10 at a rate of one per year between fiscal 2026 and 2035.

The Navy’s fiscal 2023 budget submission predicted that the first boat would be delivered in 2027 and the second in 2030. Under that schedule, the Navy’s SSBN force would drop from 14 boats in fiscal 2026 to 11 boats in 2030-2032, according to a Congressional Research Service report. The Navy argues that operating with 11 boats will be acceptable during that period

because all of the boats would be operational in those years, but it wouldn’t account for an unforeseen event that would force an SSBN out of service for a period of time.

Bell Delivers Marine Corps’ Final AH-1Z Helicopter


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A UH-1Y Venom lifts off from the deck of an amphibious assault ship as an AH-1Z Viper prepares to launch. *BELL*

AMARILLO, Texas – In a ceremony at the Amarillo Assembly Center, Bell Textron Inc., a Textron Inc. company, celebrated the delivery of the 189th AH-1Z Viper to the U.S. Marine Corps, completing the Program of Record (POR) for the latest version of the storied H-1 platform. Bell completed the UH-1Y POR of 160 aircraft in 2018 bringing the combined Ah-1Z/UH-1Y POR to 349 aircraft.

"The first production lot of US Marine Corps H-1s was ordered in 1962, and they changed the way Marines fight today," said Mike Deslatte, Bell H-1 vice president and program director. "Completing the AH-1Z and UH-1Y deliveries to the US Marine Corps adds one more chapter to the legacy of the H-1 platform."

Bell has been producing H-1s for the U.S. military since 1959. Bell originally designed the H-1 for the U.S. Army with the iconic "Huey." In 1966 Bell created the AH-1 Cobra as the first dedicated gunship. In 1970, the Bell UH-1N brought twin engine capabilities to more than 28 countries, and in 1984 the AH-1W provided the U.S. Marine Corps increased attack helicopter capability.

The current generation AH-1Z Viper and UH-1Y Venom are the most agile, mobile and survivable combination of aircraft used by the Department of Defense. The 85% common platforms are the only two aircraft that share so much commonality, providing the Marines with logistical agility and reduced operating costs. The AH-1Z achieved initial operating capacity in February 2011 and the UH-1Y achieved initial operating capacity in August 2008. The first combined Viper/Venom deployment with a Marine Expeditionary Unit occurred in 2009.

"H-1s are key to the 2022 Marine Corps Aviation Plan," said Col. Vasillios Pappas, Light/Attack Helicopters program manager (PMA-276). "With the U.S. program of record now

complete, the Marines have the flexibility to manage and deploy the helicopters based on current and future mission requirements as established at the start of the program.”

The H-1 production line is still active in support of foreign military sales to approved U.S. allies. Bell continues to produce AH-1Z Vipers for the Kingdom of Bahrain and will manufacture eight UH-1Ys and four AH-1Zs for the Czech Republic in 2023.

Since the first delivery of the AH-1Zs and UH-1Ys to the U.S. Marines, the H-1 mixed fleet has accumulated more than 450,000 flight hours through a full spectrum of military operations. Bell will continue to support the U.S. H-1s with lethality, survivability and reliability upgrades through a long-term modernization plan that helps ensure the aircraft keep an overwhelming tactical advantage for generations.